CLAIMS

What is claimed is:

1.   A recording and reproducing apparatus, comprising:

an encode unit that inputs and encodes predetermined stream data;

a data storage unit that writes the data encoded by the encode unit on a magnetic disk and reads the data written on the magnetic disk;

a decode unit that decodes the data read from the magnetic disk by the data storage unit; and wherein

the data storage unit reads other data existing before or after data to be read for decoding the data, in place of the data to be read therefore.

2.   The apparatus of claim 1, wherein when a time required to move a magnetic head for reading the data from the magnetic disk to a position of the other data is shorter than a time required to move the magnetic head to a position of the data to be read, the data storage unit reads the other data.

3.   The apparatus of claim 2, wherein the data storage unit adds a time required for the magnetic head to seek a track having predetermined data existing thereon, and a rotation latency necessary for the magnetic head to move on the track and then for the magnetic disk to rotate to thereby cause the data to reach a position of the magnetic head, thereby determining a time required to move the magnetic head to the position of the data.

4.   A recording and reproducing apparatus, comprising:

an encode unit that inputs and encodes content;

a data storage unit that writes data of the content encoded by the encode unit on a magnetic disk and reads the data written on the magnetic disk;

a decode unit that decodes the data read from the magnetic disk by the data storage unit to thereby reproduce the content; and wherein

when the content is fast-forward reproduced or fast-reverse reproduced, the data storage unit shifts data read by the fast-forward reproduction or the fast-reverse reproduction forward or backward such that a rotation latency of the magnetic disk is shortened.

5.   The apparatus of claim 4, wherein when a rotation latency required to read other data existing before or after data to be read by a magnetic head for reading the data from the magnetic disk upon the fast-forward reproduction or the fast-reverse reproduction is shorter than a rotation latency required for the magnetic head to read said data thereupon, the data storage unit reads the other data.

6.   A content reproducing apparatus for reading and reproducing a digital content recorded in a disk-shaped recording medium, comprising:

head position estimating means for estimating the present position with respect to the recording medium, of a head for reading the digital content;

data position calculating means for calculating a position of a data block for a digital content to be read next, and positions of other data blocks existing before and after the data block; and

moving destination determining means for determining a data block at which the time required to move the head is the shortest, as a data block to be read next, based on the present position of the head, which has been estimated by the head position estimating means, and the positions of the respective data blocks, which have been calculated by the data position calculating means.

7.   The apparatus of claim 6, wherein the moving destination determining means determines, based on a rotation latency necessary for the head to move on a track having predetermined data existing thereon and then for the recording medium to rotate to thereby cause the data to reach the position of the head, a time required to move the head to the position of the corresponding data block.

8.   The apparatus of claim 6, wherein the head position estimating means measures a time taken to execute a command for reading the data block and reflects the result of measurement on estimation of the position of the magnetic head.

9.   A magnetic disk device, comprising:

a magnetic disk that magnetically records data;

a magnetic head that reads and writes data from and on the magnetic disk;

a controller that controls a movement of the magnetic head to cause the magnetic head to read and write data from and on a desired position of the magnetic disk; and wherein

in place of a data block to be read, which has been specified by a logical block address, the controller causes the magnetic head to read other data block existing before or after the data block.

10.   The magnetic disk device of claim 9, wherein when a time required to move the magnetic head to a position of said other data block is shorter than a time required to move the magnetic head to a position of the data block to be read, the controller causes the magnetic head to read said other data block.

11.   The magnetic disk device of claim 10, wherein the controller estimates a position of the magnetic head with respect to the magnetic disk by a physical block address in a data recording area of the magnetic disk, and calculates a time required to move the magnetic head to each data block, based on each of physical block addresses indicative of the positions of the respective data blocks and the position of the magnetic head.

12.   The magnetic disk device of claim 11, wherein the controller measures a time taken to execute a command for reading the data block and reflects the result of measurement on estimation of the position of the magnetic head.

13.   The magnetic disk device of claim 10, wherein the controller determines, based on a rotation latency necessary for the magnetic head to move on a track with a predetermined data block existing thereon and then for the magnetic disk to rotate to

thereby cause the data block to reach the position of the magnetic head, a time required to move the magnetic head to the data block.

14.   The magnetic disk device of claim 9, wherein the data recorded on the magnetic disk is a digital content containing moving pictures.

15.   A method of controlling a content reproducing apparatus for reading and reproducing a digital content recorded in a disk-shaped recording medium, comprising:

estimating the present position with respect to the recording medium, of a head for reading the digital content;

calculating a position of a data block for the digital content to be read next, and positions of other data blocks existing before and after the data block;

calculating a time required to move the head, based on the estimated present position of head and the positions of the respective data blocks; and

reading a data block at which the calculated time required to move the head is the shortest.

16.   The method of claim 15, wherein at said step for estimating the position of the head, a time taken to execute a command for reading the digital content is measured, and the result of measurement is reflected on estimation of the position of the magnetic head.

17.   A program for controlling a computer and performing control for reading and reproducing a digital content recorded in a disk-shaped recording medium, said program allowing the computer to execute the following processes:

a process for estimating the present position with respect to the recording medium, of a head for reading the digital content;

a process for calculating positions of a data block for the digital content to be read next, and other data blocks existing before and after the data block;

a process for calculating a time required to move the head, based on the estimated present position of the head and the positions of the respective data blocks; and

a process for reading a data block at which the calculated time required to move the head is the shortest.

18.   A recording and reproducing apparatus, comprising:

an encode unit that inputs a video signal, converts the same into digital data and encodes the converted digital data;

a data storage unit that writes the data encoded by the encode unit on a magnetic disk and reads the data written on the magnetic disk;

a decode unit that decodes the data read from the magnetic disk by the data storage unit and outputs the data a video signal; and

a controller that controls the operations of the encode unit, the data storage unit and the decode unit and reads other data existing before or after data for reproducing the video signal, which is to be read from the magnetic disk, in place of said data to be read upon reading the data for reproducing the video signal therefrom.